

1. (Currently Amended) A turf reinforcement mat for supporting soil comprising:

at least one polymer net layer;

a non-woven mat comprising a plurality of multi-dimensional polymer fibers providing, wherein a cross-sectional geometry of respective multi-dimensional polymer fibers comprises at least three substantially concave and smoothly curved channels separating at least three substantially convex and smoothly curved lobes, said fibers breaking a more entangled fiber layer than non-woven mats comprising one dimensional polymer fibers, to break up the flow and energy of water passing over the soil and said mat; and

a polymer yarn, stitching said net layer to said non-woven mat.

2. (Canceled)

3. (Previously Presented) The turf reinforcement mat of claim 1, wherein said multi-dimensional polymer fiber is selected from the group consisting of polyolefins, polyesters, polyamides and blends thereof.

4. (Previously Presented) The turf reinforcement mat of claim 1, wherein said multi-dimensional fibers have a length from about 2 inches (5 cm) to about 12 inches (30 cm).

5. (Previously Presented) The turf reinforcement mat of claim 1, wherein said multi-dimensional polymer fiber has a density of from 300 denier (333 decitex) to about 2000 denier (2222 decitex).

6. (Previously Presented) The turf reinforcement mat of claim 5, wherein said multi-dimensional polymer fiber has a density of from 500 denier (555 decitex) to about 1100 denier (1222 decitex).

7. (Previously Presented) The turf reinforcement mat of claim 1, wherein the polymer of said net layer is selected from the group consisting of polyolefins, polyesters, polyamides and blends thereof.

8. (Previously Presented) The turf reinforcement mat of claim 1, further comprising a second polymer net layer, said non-woven mat being located between said first and second nets.

9. (Previously Presented) The turf reinforcement mat of claim 1, wherein the tensile strength of the turf reinforcement mat is at least 30% greater than the tensile strength of an otherwise identical turf reinforcement mat having round multi-dimensional polymer fibers.

10-17. (Cancelled)

18. (Currently Amended) A turf reinforcement mat for supporting soil comprising:

at least one polymer net layer; and

a non-woven mat attached to said polymer net layer, said non-woven mat comprising multi-dimensional polymer fibers wherein a cross-sectional geometry of respective multi-dimensional polymer fibers comprises at least three substantially concave and smoothly curved channels separating at least three substantially convex and smoothly curved lobes, said fibers breaking up the flow and energy of water passing over the soil and said mat~~having at least three lobes, said lobes defining channels therebetween, and~~ wherein said channels are adapted to capture sediment and water.

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